

US-PAT-NO: 6033582

DOCUMENT-IDENTIFIER: US 6033582 A

TITLE: Surface modification of medical implants

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Many plasma treatment techniques, for polymers in particular, use cold plasmas to activate the surface by plasma-induced polymerization and/or RF plasma treatment to break surface polymer bonds. This action generates ions and free radicals, setting up favorable conditions for subsequent RF plasma-induced polymerization and grafting of monomers to the substrate surface as described in U.S. Pat. No. 5,080,924; incorporated herein by reference. In another application, similar covalent bonding of polymeric biocompatible materials onto intraocular lenses via RF plasma grafting was successfully achieved, creating a microscopically smooth surface as described in U.S. Pat. No. 5,260,093; herein incorporated in reference.

As previously stated, the inventive method enhances medical implant surfaces by improving the adhesion characteristics of

the substrate, which in turn provides for better coating uniformity and thickness of biocompatible polymeric materials because the invention roughens and changes the micro-morphological configurations of the surface. Some of the immobilized polymeric coatings that can be used include: polyolefins, polyamides, polyimides, polyethers, polyesters, polystyrenes, polyvinyl chlorides, polypropylenes, polyisoprenes, polytetrafluoroethylenes, polyurethanes, polycarbonates, polyalkylimines (in combination with cross-linking agents: glutaraldehyde, glyoxal, malonaldehyde, succinaldehyde, adipaldehyde, or dialdehyde starch). U.S. Pat. No. 5,415,938 and U.S. Pat. No. 5,415,938, herein incorporated by reference, identify some of the existing art used to polymer coat medical implant devices.